United States Department of the Interior
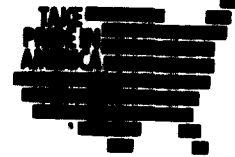
GEOLOGICAL SURVEY

4th Floor
102 East Main Street
Urbana, IL 61801
May 25, 1989

Mr. Bernard Schorle
Remedial Project Manager
U.S. Environmental Protection Agency
Region V, Mail Stop 5HS-11
230 S. Dearborn Street
Chicago, IL   60604

Dear Bernard:

Enclosed please find two copies of stream flow and water-quality data for
Killbuck Creek south of New Milford from October 1987 to September 1988.
These data show that the rate of streamflow during the April sampling
round at Pagel's Pit was significantly higher than during the rest of the
year. These data also show that the rate of streamflow during the June
sampling round at Pagel's Pit was probably more or less normal. There
does not appear to be any significant change in the water quality of the
creek during the April sampling round except that turbidity, nitrogen, and
total residue are high and fecal coliform is low. The concentration of
barium ion cited in this report is in good agreement with the concentra-
tion measured by Warzyn.

Please pass on one of these copies to Jim Hill at Warzyn. Feel free to
call me at FTS 958-5368 with any questions or comments.

Sincerely,

Robert Kay
Hydrologist

Enclosures
cc: Nicholas
        Avery

Water Resources Data Illinois

Water Year 1988

Volume 1. Illinois except Illinois River Basin

Volume 1
Illinois except Illinois River Basin

Volume 2.
Illinois River Basin

U.S. GEOLOGICAL SURVEY WATER DATA REPORT IL-88-1

Prepared in cooperation with the State of Illinois
and with other agencies

ROCK RIVER BASIN

05440520 KILLBUCK CREEK NEAR NEW MILFORD, IL

LOCATION.--Lat 42°09'36", long 89°04'32", in SW1/4NW1/4 sec.35, T.43 N., R.1 E., Winnebago County, Hydrologic Unit 07090006, at bridge on State Highway 251, 1.7 mi south of New Milford, 12.8 mi downstream from Spring Run, and at mile 2.4.

DRAINAGE AREA.--136 mi^2.

PERIOD OF RECORD.--Water years 1979 to current year. Additional chemical data for water years 1958, 1960-63, 1965-77 are published in Water-Resources Investigations 78-23 and 79-24 as site PBQ 02.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (FTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	HARD-NESS TOTAL AS CACO3) (00900)
OCT 28...	0930	17002	17002	51	682	7.70	7.0	1.8	11.8	9	<10	360
NOV 23...	1400	17002	17002	72	645	7.70	8.5	2.0	9.3	10	K27	310
JAN 26...	1100	17002	17002	150	682	6.80	0.0	4.1	12.9	8	K20	360
MAR 08...	1000	17002	17002	98	700	7.20	8.5	3.5	10.5	19	410	370
APR 12...	1600	17002	17002	188	678	7.30	12.5	8.4	10.2	10	K13	350
MAY 17...	1430	17002	17002	66	661	7.90	19.0	1.5	12.7	7	K60	340
JUL 19...	0730	17002	17002	29	653	7.40	21.5	8.4	7.3	13	K600	300
AUG 11...	1400	17002	17002	19	637	7.90	28.5	2.0	8.8	10	K170	350
SEP 15...	1230	17002	17002	16	628	7.60	21.0	1.1	7.6	13	K150	350

DATE	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA) (00916)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, TOTAL RECOV-ERABLE (MG/L AS MG) (00927)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, TOTAL RECOV-ERABLE (MG/L AS NA) (00929)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, TOTAL RECOV-ERABLE (MG/L AS K) (00937)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 28...	85	80	42	40	8.2	7.8	1.3	1.3	6	5	7.40	0.220
NOV 23...	79	72	35	32	6.0	5.5	0.6	0.30	30	8	3.60	0.090
JAN 26...	86	83	39	37	7.8	7.5	1.2	1.0	21	5	9.90	0.320
MAR 08...	85	83	40	39	9.7	9.5	1.2	1.1	11	5	8.50	0.320
APR 12...	83	79	38	36	8.1	7.9	1.1	0.79	35	6	12.0	0.210
MAY 17...	76	72	39	39	7.9	7.9	1	0.80	7	2	8.40	0.220
JUL 19...	65	63	36	35	7.5	7.3	1.4	1.3	44	10	3.50	0.560
AUG 11...	72	71	42	41	8.9	9.0	1.6	1.6	23	4	3.80	0.280
SEP 15...	68	68	44	44	8.3	8.3	1.5	1.4	3	2	3.20	0.840

(handwritten notes in left margin:) Round 1 sampling → (at APR row); Round 2 sampling. June, 88 → (at JUL row)

ROCK RIVER BASIN

05440520 KILLBUCK CREEK NEAR NEW MILFORD, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	AMMONIA UN- IONIZED (MG/L AS N) (00619)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)
OCT 28...	0.002	0.030	<0.025	210	<50	80	71	<0.5	<0.5	<50	<50	<3
NOV 23...	<0.001	0.070	<0.010	450	<50	60	46	<0.5	<0.5	<50	<50	<3
JAN 26...	<0.001	0.060	0.030	480	<50	80	70	<0.5	<0.5	<50	<50	<3
MAR 08...	<0.001	0.070	0.040	310	<50	80	70	<0.5	<0.5	<50	<50	<3
APR 12...	<0.001	0.090	0.040	500	<50	90	73	<0.5	<0.5	<50	<50	<3
MAY 17...	0.007	0.020	0.010	170	90	80	75	<0.5	<0.5	<50	<50	<3
JUL 19....	0.002	0.100	0.050	520	80	80	73	<0.5	<0.5	<50	<50	<3
AUG 11...	0.016	0.080	0.040	480	<50	80	74	<0.5	<0.5	<50	<50	<3
SEP 15...	0.011	0.040	0.010	100	<50	80	80	<0.5	<0.5	<50	<50	<3

DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 28...	<3	<5	<5	<5	<5	<5	<5	330	<50	<50	<50	44
NOV 23...	<3	<5	<5	<5	<5	<5	<5	1000	<50	<50	<50	100
JAN 26...	<3	<5	<5	<5	<5	<5	<5	740	<50	<50	<50	47
MAR 08...	<3	<5	<5	<5	<5	<5	<5	480	<50	<50	<50	51
APR 12...	<3	<5	<5	<5	<5	<5	<5	790	<50	<50	<50	43
MAY 17...	<3	<5	<5	<5	<5	<5	<5	230	<50	<50	<50	41
JUL 19...	<3	<5	<5	<5	<5	<5	<5	830	<50	<50	<50	91
AUG 11...	<3	<5	<5	<5	<5	<5	<5	650	<50	<5	<5	80
SEP 15...	<3	<5	<5	<5	<5	<5	<5	230	55	<5	<5	94

ROCK RIVER BASIN

05440520 KILLBUCK CREEK NEAR NEW MILFORD, IL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, TOTAL RECOV-ERABLE (UG/L AS SR) (01082)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, TOTAL (UG/L AS V) (01087)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
28...	24	<5	<5	<3	<3.0	110	100	<5	<5	<100	<50
NOV											
23...	65	<5	<5	<3	<3.0	80	75	<5	<5	190	230
JAN											
26...	27	<5	<5	<3	<3.0	110	110	<5	<5	<50	<50
MAR											
08...	35	<5	<5	<3	<3.0	110	110	<5	<5	<50	<50
APR											
12...	9	<5	<5	<3	<3.0	110	110	<5	<5	<50	<100
MAY											
17...	30	<5	<5	<3	<3.0	110	110	<5	<5	<100	<50
JUL											
19...	30	<5	<5	<3	<3.0	90	91	<5	<5	<50	<50
AUG											
11...	35	<5	<5	<3	<3.0	80	83	<5	<5	<50	<50
SEP											
15...	77	<5	5	<3	<3.0	80	86	<5	<5	100	<100

C DISSOLVED-OXYGEN SOLUBILITY DATA

Table C-1 Dissolved oxygen,[a] mg/L

Temperature, °C	Chloride Concentration, mg/L				
	0	5,000	10,000	15,000	20,000
0	14.62	13.79	12.97	12.14	11.32
1	14.23	13.41	12.61	11.82	11.03
2	13.84	13.05	12.28	11.52	10.76
3	13.48	12.72	11.98	11.24	10.50
4	13.13	12.41	11.69	10.97	10.25
5	12.80	12.09	11.39	10.70	10.01
6	12.48	11.79	11.12	10.45	9.78
7	12.17	11.51	10.85	10.21	9.57
8	11.87	11.24	10.61	9.98	9.36
9	11.59	10.97	10.36	9.76	9.17
10	11.33	10.73	10.13	9.55	8.98
11	11.08	10.49	9.92	9.35	8.80
12	10.83	10.28	9.72	9.17	8.62
13	10.60	10.05	9.52	8.98	8.46
14	10.37	9.85	9.32	8.80	8.30
15	10.15	9.65	9.14	8.63	8.14
16	9.95	9.46	8.96	8.47	7.99
17	9.74	9.26	8.78	8.30	7.84
18	9.54	9.07	8.62	8.15	7.70
19	9.35	8.89	8.45	8.00	7.56
20	9.17	8.73	8.30	7.86	7.42
21	8.99	8.57	8.14	7.71	7.28
22	8.83	8.42	7.99	7.57	7.14
23	8.68	8.27	7.85	7.43	7.00
24	8.53	8.12	7.71	7.30	6.87
25	8.38	7.96	7.56	7.15	6.74
26	8.22	7.81	7.42	7.02	6.61
27	8.07	7.67	7.28	6.88	6.49
28	7.92	7.53	7.14	6.75	6.37
29	7.77	7.39	7.00	6.62	6.25
30	7.63	7.25	6.86	6.49	6.13

[a] Saturation values of dissolved oxygen in fresh water and sea water exposed to dry air containing 20.90 percent oxygen under a total pressure of 760 mm of mercury.

Source: G. C. Whipple and M. C. Whipple: Solubility of Oxygen in Sea Water, *J. Am. Chem. Soc.*, vol. 33, p. 362, 1911. Calculated using data developed by C. J. J. Fox: On the Coefficients of Absorption of Nitrogen and Oxygen in Distilled Water and Sea Water and Atmospheric Carbonic Acid in Sea Water, *Trans. Faraday Soc.*, vol. 5, p. 68, 1909.

D MOST PROBABLE NUMBER OF COLIFORMS PER 100 mL OF SAMPLE